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Teachers' Recognition and Referral of Anxiety Disorders in Primary School Children

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Abstract

This study investigated the ability of primary school teachers to recognise and refer children with anxiety symptoms. Two hundred and ninety-nine primary school teachers completed a questionnaire exploring their recognition and referral responses to five hypothetical vignettes that described boys and girls with varying severity of anxiety symptoms. Results revealed that teachers were generally able to recognise and make the decision to refer children with severe levels of anxiety. However, they had difficulty distinguishing between children with moderate anxiety symptoms and a severe anxiety disorder. Female teachers were more likely to refer children than were male teachers. The implications and future research are discussed.

Teachers' Recognition and Referral of Anxiety Disorders in Primary School Children

The experience of anxiety is considered a natural part of children's development. However, while most children learn to manage their anxiety, approximately 3 – 24% of children below the age of 12 develop significant anxiety problems that interfere with daily functioning (Cartwright-Hatton, McNicol, & Doubleday, 2006). Of these, approximately 2.5 – 5% of children meet criteria for an anxiety disorder; that is, when children exhibit a fear response in the absence of a real danger (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Ford, Goodman, & Meltzer, 2003; Ollendick, King & Yule, 1994).

Research has indicated that anxiety disorders can have detrimental consequences on children, both in the short term and long term. Excessive anxiety can lead to significant disability, equally problematic to that of depression (Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001). Studies have indicated that children who experience anxiety disorders have lower academic achievement (Ialongo, Edlesohn, Werthamer-Larsson, Crockett, & Kellam, 1995), problems with peer and parental relationships (Ezpeleta et al., 2001; Strauss, Frame & Forehand, 1987), and general impairments in social and psychological functioning (Messer & Beidel, 1994). The difficulties associated with anxiety disorders, such as excessive school absenteeism (Last & Strauss, 1990) and impairments in peer relationships, can lead to long-term poor vocational adjustment (Hibbert, Fogelman, & Manor, 1990), negative self-perception (Rubin, 1985), poor self-esteem (Strauss et al., 1987) and an increased likelihood of psychological disorders later in life (Bittner, Egger, Erkanli, Costello, Foley, & Angold, 2007; Copeland, Shanahan, Costello, & Angold, 2009; Kovacs & Devlin, 1998).

Without treatment, anxiety disorders are relatively persistent, indicating that they are not an experience children outgrow naturally. Young people who have an anxiety disorder are at a significantly higher risk to continue to have an anxiety disorder as they transition

from childhood to adolescence (Bittner et al., 2007) and from adolescence to early adulthood (Pine, Cohen, Gurley, Brook, & Ma, 1998). This study will refer to anxiety disorders as an overall classification given the high co-morbidity between them and the similar outcomes to treatment approaches for specific anxiety disorders (Costello, Egger, & Angold, 2005; Saavedra, Silverman, Morgan-Lopez, & Kurtines, 2010).

Girls are almost twice as likely to experience an anxiety disorder compared to boys (Costello et al., 2003; Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998). However, it is unclear exactly why this is the case. It might be that the experience of anxiety in children is different between genders due to the result of socio-cultural factors. Specifically, the expression of anxiety and fear is considered less acceptable for boys, hence less tolerated in boys than in girls (Stevenson-Hinde & Shouldice, 1993). This might lead to boys under-reporting anxiety levels to avoid appearing weak and vulnerable, which would be inconsistent with their typical masculine gender role (Barlow, 1988). It is likely that parents and other socialisation agents (e.g. teachers, peers) may encourage children to conform to gender stereotyped behaviour by accepting and reinforcing anxious behaviours in girls, and activity and assertiveness among boys (McLean & Hope, 2010).

Considering the debilitating and lasting impacts of anxiety disorders for children, and that they rarely remit without treatment (Flament et al., 1990; Kovacs & Devlin, 1998), it is important to ensure that preventative measures are taken and early intervention is provided. However, given the prevalence of anxiety disorders in children, very few children are identified and referred for treatment (Costello & Janiszewski, 1990; Zahner & Daskalakis, 1997). This may be because children rarely seek help for mental health concerns on their own initiative (Ford, Sayal, Meltzer, & Goodman, 2005) as they rely on adults to recognise the problem and take appropriate action to seek assistance.

Parents are the adults most likely to initiate the help-seeking process for their children when they recognise that there is a problem (Lyneham & Rapee, 2007; Sayal, 2006). Parents, however, often lack the skills to identify mental health problems in their children. This is especially true about anxiety problems, with 61% of parents of children with an anxiety disorder not recognising there was a problem, and 67% not acknowledging that their child's diagnosed anxiety disorder had any impact on their family (Teagle, 2002). Parents may not identify anxiety problems in children because they may experience anxiety themselves, hence view it as normal behaviour. This is because research has established that anxiety is a highly familial disorder, with children with anxiety disorders being considerably more likely to have a parent with an anxiety disorder when compared to other children (Klein, 2009; Last, Hersen, Kazdin, Francis, & Grubb, 1987; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991; Lieb, Wittchen, Hofler, Fuetsch, Stein, & Merikangas, 2000). Parents also do not have the opportunity to compare their child's behaviour with that of other children and this may make it difficult for them to have an understanding of non-normative behaviour.

A parent's ability to recognise problems also predicts their choice to refer their child to mental health services. Specifically, if parents do not perceive a problem (which is the case for the majority), they do not access services on behalf of their child (Teagle, 2002). Other barriers to parents referring their children for mental health treatment includes the stigma surrounding mental health services, the costs of treatment, the desire to handle the problems within the family unit, and a fear of not having control over the treatment process (McKay, Stoewe, McCadam, & Gonzales, 1998; Thurston & Phares, 2008).

Given this finding, it is important to ensure that access to mental health services is not dependent solely on parents' perceptions of excessive anxiety in their children. Schools are an ideal setting in which to identify and respond to mental health concerns in children (Rickwood, 2005). Teachers are in a key position to identify mental health problems, such as

excessive anxiety, in their students and have the ability to refer to mental health services both within the school as provided by the guidance counsellors and outside the school with community-based organisations (Rickwood, Deane, Wilson, & Ciarrochi, 2005). Their understanding of typical behaviour for a particular student and their experience of a wide range of children's behaviour allows them to identify non-normative behaviour. Teachers therefore have an important role in the identification of anxiety disorders in children and can use their expertise to appropriately refer to mental health services (Loades & Mastroyannopoulou, 2010; McGorry, Purcell, Hickie, & Jorm, 2007).

While it is clear that many parents have difficulty identifying mental health problems in their children (Ford et al., 2005; Sanders et al., 1999; Zubrick, et al., 1995), very little research has examined whether teachers have the ability to identify anxiety disorders in children. A second question is whether, once identified, teachers refer these children to mental health professionals. Examination of the current coursework for education degrees reveals that teachers have little to no education or training in children's mental health as part of their teaching qualifications (Gowers, Thomas, & Deeley, 2004). This is congruent with reports from teachers who often feel inadequately prepared to recognise and manage students with mental health concerns because they have not received this training (Green, Clopton, & Pope, 1996; Rothi, Leavey, & Best, 2008; Rothi, Leavey, Chamba, & Best, 2005). If teachers are not receiving training, it is doubtful that they have the knowledge of the signs and symptoms of excessive anxiety in children. As most referrals for children with mental health concerns are made when children are in primary school (Harris, Gray, Rees-McGee, Carroll, & Zaremba, 1987), this study will focus on research with primary-aged children.

The research available in this area has focused broadly on comparing teacher's identification and referral of children with internalising and externalising disorders. It has been found that teachers frequently overlook children with internalising problems as these

children are often well behaved (Molins & Clopton, 2002) or teachers believe these problems will improve as the child matures (Green et al., 1996). Percy, Clopton & Pope (1993) found that teachers were less able to identify internalising problems in the classroom setting, especially when the child's symptoms were severe. Furthermore, when teachers did refer, they were more likely to refer children with externalising disorders compared to internalising disorders. It was suggested that this could be due to the difficulty of managing children with externalising problems in the classroom (Green et al., 1996; Percy et al., 1993). There were no differences in recognition or referral of boys or girls with problems.

Loades and Mastroyannopoulou's (2010) recent study has confirmed Percy and colleagues (1993) earlier research finding that although teachers are able to recognise the existence of psychological disorders, they were far more concerned about children with externalising disorders than internalising disorders. The gender of the child influenced the recognition of the problem with teachers more accurately recognising a problem when a boy had an externalising disorder compared to a girl with an internalising disorder. Similarly, Molins and Clopton (2002) found that teachers were more concerned and more likely to refer boys and externalising behaviour problems compared to girls and internalising behaviour problems. However, proportionately, there were similar percentages of children referred from each problem type and gender, indicating that the greater frequency of referrals for boys and externalising problems was due to the greater number of children originally identified as having concerning behaviour. Given the high prevalence of internalising disorders, these findings would indicate that teachers might have difficulty initially recognising symptoms of internalising disorders.

Based on the limited research of teacher's identification and referral of children with excessive anxiety, this study investigated the ability of teachers to identify anxiety problems of differing severity in children and their subsequent decisions whether or not to refer to

mental health services. The influence of both the child's and teachers' gender on identification and referral of anxiety was also examined. That is, whether boys with anxiety were recognised and referred as much as girls, and whether male and female teachers responded similarly in their recognition and referral of children with anxiety.

Method

Participants

Three hundred and fifty-eight teachers were recruited from 27 primary schools in a large Australian city. Fifty-nine participants were excluded from the sample either because they were not classroom teachers or there was missing data, leaving a total of 299 participants. Sixty-four participants were male (22%) and 234 were female (78%) (1 participant did not reveal gender). The mean age was 40 years ($SD = 11.29$) with a range 21 to 71 years. The mean number of years of teaching was 16 ($SD = 11.19$).

Measures

Teachers' Anxiety Identification and Referral Questionnaire (TAIRQ). The TAIRQ is a four part self-report questionnaire developed by the researchers for use in this study. The results of two sections of the TAIRQ will be reported in this study and the subsequent sections will be reported in a subsequent paper. The sections to be later examined explored qualitative responses to the definition of anxiety and teachers' identification of signs and symptoms of excessive anxiety.

The first section of the TAIRQ comprised socio-demographic information on age, gender, teaching experience (years and grade-level), status of teaching career, and previous referring history. The second part of the questionnaire was based on five vignettes, four of which showed internalising disorders used in previous research (Green et al., 1996; Percy et al., 1993). These four vignettes were changed to reflect children with specific anxiety problems, and increased in severity for each vignette. Symptoms of anxiety, selected from the

DSM-IV-TR and Spence Children's Anxiety Scale were either added or excluded to represent varying degrees of severity of anxiety (American Psychiatric Association, 2000; Spence, 1998). A fifth vignette was added to represent a child with minimal symptoms of anxiety and extroverted tendencies to clearly distinguish it from the other vignettes (see appendix for the vignettes).

Once finalised, these five vignettes were sent to nine experts in childhood psychological problems who ranked them according to severity of presenting anxiety. The vignettes were amended according to feedback. Following each vignette, a set of questions was posed. The questions that will be analysed in this study asked teachers, "If this child was in your classroom, would you refer him/her to the guidance counsellor?" (5 – definitely would to 1 – definitely would not) and invited teachers to rank order the five children from the vignettes in order of need of referral. The other questions explored qualitative response to teachers' responses on need of referral, and the rates of encountering and previous referral of children similar to the description. The questionnaire was produced in four versions to randomise gender (i.e. half of the questionnaires included boys names and half girls names) and to randomise and counterbalance the order of the vignettes in the questionnaire to manage order effects. In the final sample, 51% of the questionnaires described boys and 49% described girls.

Procedure

Teachers completed the questionnaire either in a staff meeting with a researcher present or posted the questionnaire back to the researchers in a reply-paid envelope. The questionnaire took approximately 10-15 minutes to complete.

Results

Data Screening

The assumption of normality was assessed by inspecting the skewness and kurtosis of each variable used in the analysis and the presence of outliers. Although initial screening revealed that several variables had high levels of skewness and kurtosis, Cook's distance was not greater than 1 (max = 0.054) so all variables were retained. The assumption of homogeneity of variance and variance-covariance was assessed using Levene's test and Box's test. To account for violations of normality and homogeneity of variance and variance-covariance, Pillai-Bartlett trace was used because it is a more robust statistic (Field, 2009). Where Levene's statistic was significant, a more conservative alpha level of .025 was used to correct for this (Keppel & Wickens, 2004). Despite the violation of normality, there were greater than 20 degrees of freedom for error for all analyses ($df = 284$) indicating that the analyses were robust (Tabachnick & Fidell, 2007).

The assumption of sphericity was assessed using Mauchly's test. This statistic was significant for each analysis indicating a violation of sphericity. Therefore, degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity.

Identifying Children in Need of Referral

The descriptive statistics for teachers' ranking of the children in the vignettes according to need of referral (N=246) can be seen in Table 1. Several teachers' responses were excluded because there was either missing data or an incorrect ranking procedure used. Teachers correctly ranked the need for referral according to severity of anxiety in all but one case. This was for the child with moderate anxiety symptoms who teachers reported in greater need of referring than the child with a severe anxiety disorder.

A 2 x 2 x 5 mixed model multivariate analysis of variance (MANOVA) was performed to investigate the effects of severity of anxiety, child's gender and teacher's gender on teachers' rankings of need of referral. Results revealed a significant multivariate main effect of severity of anxiety on the ranked need of referral of each child in the vignettes

$V = 0.84$, $F(4, 237) = 301.96$, $p < .001$, partial $\eta^2 = 0.84$. There were no significant two-way or three-way interactions and no significant main effect for child or teacher gender.

Table 1

Mean (Standard Deviation) for the Rank Given to Children According to Need of Referral

Severity of anxiety	M (SD)
Very severe anxiety disorder	1.47 (.79)
Severe anxiety disorder	2.77 (1.01)
Moderate anxiety symptoms	2.52 (1.01)
Mild anxiety symptoms	3.46 (0.88)
Minimal anxiety symptoms	4.78 (0.77)

Influence of severity of child anxiety. Results revealed a significant main effect of severity of anxiety on the need to refer children in the vignettes, $F(3.53, 847.78) = 257.83$, $p < .001$, partial $\eta^2 = 0.52$. There were no significant two-way or three-way interactions.

Polynomial contrasts were used to test the significance of a linear trend in teachers' ranking of children in need of referral according to the severity of anxiety. The contrast analysis indicated a significant positive linear trend, $F(1, 240) = 885.69$, $p < .001$, partial $\eta^2 = 0.79$. In addition to a significant linear trend, a curvilinear trend was also significant due to the rank given to the vignette describing a child with moderate anxiety symptoms (see Figure 1).

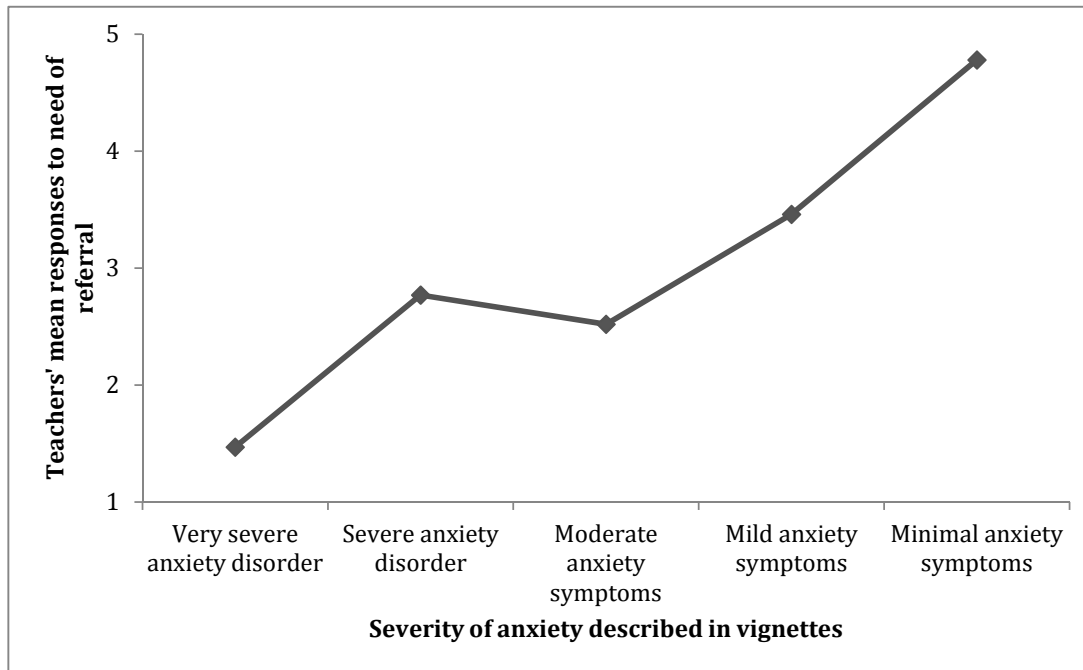


Figure 1. Teachers' mean responses to ranking the children in need of referral for each level of severity of anxiety described in the vignettes.

Using a Bonferroni adjustment to control for Type 1 error, post hoc pairwise comparisons indicated that teachers' rankings on the need to refer children in the vignettes differed significantly across and between all of the severity levels of anxiety, $p = .001$. This indicates that teachers were generally able to correctly identify which children were in most need of referral based on their presenting anxiety symptoms. However, they did have difficulty distinguishing between a child with moderate anxiety symptoms and a child with a severe anxiety disorder.

Decisions to Refer Children with Anxiety

To determine whether teachers' decisions to refer a child was influenced by the severity of the child's anxiety, the child's gender or the teachers' gender, a $2 \times 2 \times 5$ mixed-model MANOVA was performed. There was a significant multivariate main effect of severity of anxiety on teachers' decision to refer a child, $V = 0.837$, $F(4, 281) = 360.49$, $p <$

.001, partial $\eta^2 = 0.84$. There were no significant two-way or three-way interactions.

However, there was a significant main effect for teacher gender but not for child gender.

Influence of severity of child anxiety. Results revealed a significant main effect of severity of anxiety on the decision to refer a child, $F(3.89, 1104.65) = 315.57, p < .001$, partial $\eta^2 = 0.53$. There were no significant two-way or three-way interactions. Polynomial contrasts indicated a significant negative linear trend in decision to refer according to the severity of anxiety, $F(1, 284) = 1149.63, p < .001$, partial $\eta^2 = 0.80$. The polynomial tests of curvilinear trends were also significant (see Figure 2). However, the examination of the graph indicates that this is due to the unexpected scores for the child with moderate anxiety symptoms.

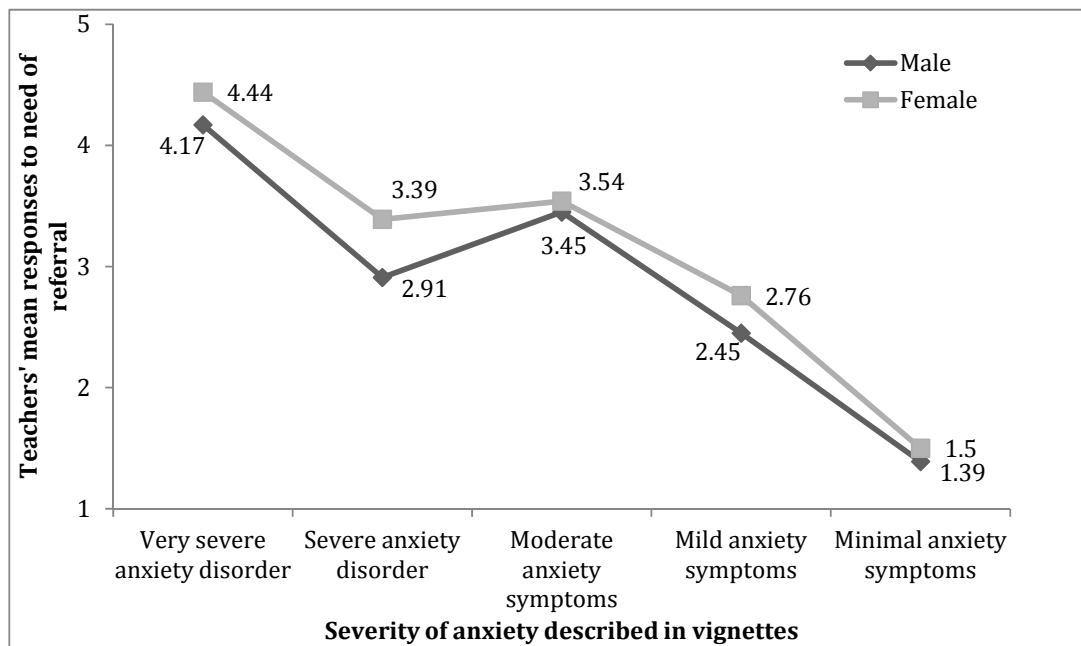


Figure 2. Male and female teachers' mean responses for their decision to refer for each level of severity of anxiety described in the vignettes.

Using a Bonferroni adjustment to control for Type 1 error, post hoc pairwise comparisons indicated that the teachers' decision to refer each child in the vignette differed

significantly across and between all severity levels of anxiety, $p \leq .001$. This indicates that teachers generally decided to refer children based on the severity of presenting anxiety symptoms. However, teachers decided to refer moderate anxiety symptoms more than a severe anxiety disorder.

Influence of teacher gender. For teachers' referral of children in the vignette, the Levene's test was significant for two vignettes. Hence, Pillai's trace and a more conservative alpha were used for all analyses. Results revealed a significant main effect of teachers' gender on decision to refer a child from the vignette, $F(1, 284) = 10.31, p = .001$, partial $\eta^2 = 0.04$, indicating that female teachers ($M = 3.12, SE = 0.04$) decided to refer more than male teachers ($M = 2.87, SE = 0.07$). There was a non-significant main effect of child's gender, $F(1, 284) = 0.37, p = .54$, partial $\eta^2 = 0.001$, and a non-significant interaction, $F(1, 284) = 0.70, p = .41$, partial $\eta^2 = 0.002$.

Discussion

The aim of this study was to investigate teachers' recognition of children with excessive anxiety and their decision to refer. This study was also interested in whether the child's gender or teacher's gender influenced recognition and referral responses. The results revealed that teachers could generally identify which children had the most severe levels of anxiety and which children had the least severe levels of anxiety. However, teachers had difficulty in distinguishing between a child with moderate anxiety symptoms and a child with a severe anxiety disorder. Although there is no previous research specifically investigating this area, these findings may provide a better insight into the results of Percy and colleagues (1993). For children with a severe anxiety disorder (but not very severe), teachers may have difficulty differentiating these children from those with subclinical moderate anxiety symptoms. This is, in part, consistent with the finding that teachers are less able to identify anxiety symptoms in children when they are severe (Percy et al., 1993). However, teachers

were still able to recognise the extreme ends of the anxiety spectrum. Therefore, it may be that teachers can recognise when anxiety levels are very severe, but they may have difficulty distinguishing symptoms that border on the clinical and non-clinical range.

Teachers' qualitative responses indicated that they placed great importance on peer interaction and the development of social skills (Headley & Campbell, 2011). They viewed a child's moderate anxiety symptoms as problematic and potentially indicative of a bigger issue. This may indicate that teachers have a preference for identifying signs of children's social well-being, which may come at the cost of identifying excessive anxiety problems. This is consistent with the report that teachers have difficulty identifying symptoms of internalising problems (Molins & Clopton, 2002), and that social difficulties may be more easily identified.

A second finding of this study was that teachers' decisions to refer a child with anxiety were influenced by the severity of anxiety. Whilst teachers decided to refer the very severe anxiety disorders, they were more likely to refer moderate anxiety symptoms over a severe anxiety disorder. This is similar to their pattern of identifying anxiety. This may be due to reasons previously discussed; specifically, that teachers viewed moderate anxiety symptoms that reflected social difficulties as having greater need for referral compared to symptoms consistent with a severe anxiety disorder. This is consistent with findings that children with internalising problems may be overlooked in the classroom due to good behaviour (Molins & Clopton, 2002) and teachers may be more likely to recognise children in need of referral who have obvious social difficulties.

An interesting finding that contributes to our current understanding of teacher's referral patterns was that female teachers were more likely to refer children to the guidance counsellor compared to male teachers. No previous research has examined the influence of teacher's gender on referral rates. However, it may be hypothesised that the culture

surrounding mental health problems and gender may have influenced this result. Previous research has indicated that it is more acceptable for females to display anxiety compared to males, and that this may be due to males conforming to gender roles of being tough and fearless (Barlow, 1988; McLean & Hope, 2010; Stevenson-Hinde & Shouldice, 1993). It may be that these socialised gender role beliefs led to male teachers identifying less need for referral as it is better to ignore this problem and hope it will go away because the stigma of identification is greater than the cure. As this is nascent research, further research is needed to determine if these findings are replicable. It is also important to consider the unequal gender ratio of teachers in the current sample; however, it was representative of the unequal gender ratio in the primary teacher population. Future studies should attempt to sample more equal numbers of male and female teachers when investigating the effects of teacher gender.

Consistent with Percy and colleagues (1993), there were no child gender differences in teachers' recognition or referral of boys or girls. This is inconsistent with epidemiological studies and research that has indicated that teachers are more likely to recognise (Loades & Mastroiannopoulou, 2010) and refer (Molins & Clopton, 2002) boys compared to girls. However, the type of problem experienced by the child (i.e. internalising or externalising) may have influenced previous findings. The lack of gender difference found in the present study may be because teachers have focused primarily on the content of the vignettes and disregarded the gender of the child. Future research specifically investigating the influence of a child's gender on recognition and referral of anxiety disorders may benefit from employing an alternative research design that focuses directly on differentiating children's gender.

This study had a significant strength in the sample size obtained and the sampling methodology employed. By attending each school's staff meeting, the sample of teachers was likely unbiased because most, if not all, teachers at the meeting completed the questionnaire. Therefore, a more representative sample was obtained and not limited to those teachers with a

specific interest in children's mental health. The vignettes used in this study had been previously validated and were adjusted by experts in the field to represent children with differing levels of anxiety. This likely made the vignettes as realistic as possible whilst maintaining consistency.

Whilst having a strong methodological base, the limitations of using vignettes have been documented in previous research (Loades & Mastroyannopoulou, 2010). Specifically, teachers may have responded to the vignettes with an idealistic response that may be different from their usual identification and referral patterns within the classroom setting (Lucas, Collins & Langdon, 2009; Norcini, 2004). It is worth noting that vignettes are limited in their ecological validity and that teachers may not have responded to the vignettes in the same manner that they would respond to a child with mental health problems within their classroom.

Although based on previous research, the current vignettes have not been tested for validity and reliability, which may limit the interpretation of the results. However, given the little changes that were made to the previously validated vignettes, this likely did not have a significant impact on the results. The generalisability of the findings may also be limited as teachers were sampled from one major city in Australia. However, the geographical locations of the schools were widely dispersed throughout that city and would represent a diverse sample for this region. This study only identified teachers' recognition of anxiety (as a measure of teachers' knowledge of anxiety) as a barrier to referring. Therefore, future research could explore other barriers teachers face in preventing them from referring children with mental health problems.

Based on the findings of the current study, it is clear that teachers can recognise and would refer children with anxiety problems. However, it appears that they have difficulty distinguishing anxiety when it is at a moderate to severe level. It is important for teachers to

be able to make this distinction, as many children experiencing an anxiety disorder may not be referred for treatment. Additionally, given the nature of anxiety disorders, they are likely suffering silently within the classroom setting. Therefore, teachers may benefit from receiving specialised training and ongoing professional development in children's mental health. Educational efforts should also focus on minimising the cultural biases about gender and mental health problems, as this might have influenced male teachers' lower referral patterns. If we can equip teachers with the necessary skills to identify excessive anxiety in children, then we can improve the educational, social, and psychological outcomes for all children.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: Text revision* (4 ed.). Arlington, VA: American Psychiatric Association.
- Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York: Guilford Press.
- Bittner, A., Egger, H. L., Erkanli, A., Costello, E. J., Foley, D. L., & Angold, A. (2007). What do childhood anxiety disorders predict? *Journal of Child Psychology and Psychiatry*, *48*, 1174-1183. doi:10.1111/j.1469-7610.2007.01812.x
- Cartwright-Hatton, S., McNicol, K., & Doubleday, E. (2006). Anxiety in a neglected population: Prevalence of anxiety disorders in pre-adolescent children. *Clinical Psychology Review*, *26*, 816-833. doi:10.1016/j.cpr.2005.12.002
- Copeland, W. E., Shanahan, L., Costello, J., & Angold, A. (2009). Childhood and adolescent psychiatric disorders as predictors of young adult disorders. *Archives of General Psychiatry*, *66*, 764-772. doi:10.1001/archgenpsychiatry.2009.85
- Costello, E. J., Egger, H. L., & Angold, A. (2005). The developmental epidemiology of

anxiety disorders: Phenomenology, prevalence, and comorbidity. *Child and Adolescent Psychiatric Clinics of North America*, *14*, 631-648.

doi:10.1016/j.chc.2005.06.003

Costello, E. J., & Janiszewski, S. (1990). Who gets treated? Factors associated with referral in children with psychiatric disorders. *Acta Psychiatrica Scandinavica*, *81*, 523-529.

doi:10.1111/j.1600-0447.1990.tb05492.x

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, *60*, 837-844. doi:10.1001/archpsyc.60.8.837

doi:10.1001/archpsyc.60.8.837

Ezpeleta, L., Keeler, G., Erkanli, A., Costello, E. J., & Angold, A. (2001). Epidemiology of psychiatric disability in childhood and adolescence. *Journal of Child Psychology and Psychiatry*, *42*, 901-914. doi:10.1111/1469-7610.00786

doi:10.1111/1469-7610.00786

Flament, M. F., Koby, E., Rapoport, J., Berg, C. J., Zahn, T., Cox, D., ...Lenane, M. (1990). Childhood obsessive-compulsive disorder: A prospective follow-up study. *Journal of Child Psychology and Psychiatry*, *31*, 363-380. doi:10.1111/j.1469-7610.1990.tb01575.x

doi:10.1111/j.1469-7610.1990.tb01575.x

7610.1990.tb01575.x

Field, A. (2009). *Discovering statistics using SPSS (3rd ed.)*. London, England: Sage.

Ford, T., Goodman, R., & Meltzer, H. (2003). The British Child and Adolescent Mental

Health Survey 1999: The prevalence of DSM-IV disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *42*, 1203-1211. doi:10.1097/00004583-200310000-00011

doi:10.1097/00004583-200310000-00011

200310000-00011

Ford, T., Sayal, K., Meltzer, H., & Goodman, R. (2005). Parental concerns about their child's emotions and behaviour and referral to specialist services: General population survey.

British Medical Journal, *331*, 1435-1436. doi:10.1136/bmj.331.7530.1435

doi:10.1136/bmj.331.7530.1435

Gowers, S., Thomas, S., & Deeley, S. (2004). Can primary schools contribute effectively to

- Tier I child mental health services? *Clinical Child Psychology and Psychiatry*, 9, 419-425. doi:10.1177/1359104504043924
- Green, M. T., Clopton, J. R., & Pope, A. W. (1996). Understanding gender differences in referral of children to mental health services. *Journal of Emotional and Behavioral Disorders*, 4, 182-190. doi:10.1177/106342669600400305
- Harris, J. D., Gray, B. A., Rees-McGee, S., Carroll, J. L., & Zaremba, E. T. (1987). Referrals to school psychologists: A national survey. *Journal of School Psychology*, 25, 343-354. doi: DOI: 10.1016/0022-4405(87)90036-7.
- Headley, C., J., & Campbell, M.A. (2011). Primary school teachers' knowledge of what anxiety is and their ability to identify the signs and symptoms of excessive anxiety. Paper in preparation
- Hibbert, J. A., Fogelman, K., & Manor, O. (1990). Occupational outcomes of truancy. *British Journal of Educational Psychology*, 60, 171-179. Retrieved from document delivery at <http://www.qut.edu.au>
- Ialongo, N., Edlesohn, G., Werthamer-Larsson, L., Crockett, L., & Kellam, S. (1995). The significance of self-reported anxious symptoms in first grade children: Prediction to anxious symptoms and adaptive functioning in fifth grade. *Journal of Child Psychology and Psychiatry*, 3, 427-437. doi:10.1111/j.1469-7610.1995.tb01300.x
- Keppel, G. & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Klein, R. G. (2009). Anxiety disorders. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 50, 153-162. doi:10.1111/j.1469-7610.2008.02061.x
- Kovacs, M., & Devlin, B. (1998). Internalizing disorders in childhood. *Journal of Child Psychology and Psychiatry*, 39, 47-63. doi:10.1017/S0021963097001765

- Last, C. G., Hersen, M., Kazdin, A. E., Francis, G., & Grubb, H. J. (1987). Psychiatric illness in the mothers of anxious children. *American Journal of Psychiatry*, *144*, 1580–1583. Retrieved from <http://ajp.psychiatryonline.org.ezp01.library.qut.edu.au/>
- Last, C. G., Hersen, M., Kazdin, A. E., Orvaschel, H., & Perrin, S. (1991). Anxiety disorders in children and their families. *Archives of General Psychiatry*, *48*, 928–934. Retrieved from document delivery at <http://www.qut.edu.au>
- Last, C. G., & Strauss, C. C. (1990). School refusal in anxiety-disordered children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *29*, 31-35. doi:10.1097/00004583-199001000-00006
- Lieb, R., Wittchen, H-U., Hofler, M., Fuetsch, M., Stein, M. B., & Merikangas, K. R. (2000). Parental psychopathology, parenting styles, and the risk of social phobia in offspring: A prospective-longitudinal community study. *Archives of General Psychiatry*, *57*, 859–866. doi:10.1001/archpsyc.57.9.859
- Lewinsohn, P. M., Gotlib, I. H., Lewinsohn, M., Seeley, J. R., & Allen, N. B. (1998). Gender differences in anxiety disorders and anxiety symptoms in adolescents. *Journal of Abnormal Psychology*, *107*, 109-117. doi:10.1037//0021-843X.107.1.109
- Loades, M. E., & Mastroyannopoulou, K. (2010). Teachers' recognition of children's mental health problems. *Child and Adolescent Mental Health*, *15*, 150-156. doi:10.1111/j.1475-3588.2009.00551.x
- Lucas, V. L., Collins, S., & Langdon, P. E. (2009). The causal attributions of teaching staff towards children with intellectual disabilities: A comparison of 'vignettes' depicting challenging behaviour with 'real' incidents of challenging behaviour. *Journal of Applied Research in Intellectual Disabilities*, *22*, 1-9. doi:10.1111/j.1468-3148.2008.00428.x
- Lyneham, H. J., & Rapee, R. M. (2007). Childhood anxiety in rural and urban areas:

- Presentation, impact and help seeking. *Australian Journal of Psychology*, 59, 108 – 118. doi:10.1080/00049530701317082
- McGorry, P. D., Purcell, R., Hickie, I. B., & Jorm, A. F. (2007). Investing in youth mental health is a best buy. *Medical Journal of Australia*, 187(7), S5-7. Retrieved from <https://www.mja.com.au/>
- McKay, M. M., Stoewe, J., McCadam, K., & Gonzales, J. (1998). Increasing access to child mental health services for urban children and their caregivers. *Health & Social Work*, 23, 9-15. Retrieved from <http://web.ebscohost.com.ezp01.library.qut.edu.au/594eb58b04e7%40sessionmgr14&bdata=JnNpdGU9ZWlhvc3QtbGl2ZQ%3d%3d>
- McLean, C. P., & Hope, D. A. (2010). Subjective anxiety and behavioral avoidance: Gender, gender role, and perceived confirmability of self-report. *Journal of Anxiety Disorders*, 24, 494-502. doi: 10.1016/j.janxdis.2010.03.006
- Messer, S. C., & Beidel, D. C. (1994). Psychosocial correlates of childhood anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33, 975-983. doi:10.1097/00004583-199409000-00007
- Molins, N. C., & Clopton, J. R. (2002). Teachers' reports of the problem behavior of children in their classrooms. *Psychological Reports*, 90, 157-164. doi:10.2466/PR0.90.1.157-164
- Norcini, J. (2004). Back to the future: Clinical vignettes and the measurement of physician performance. *Annals of Internal Medicine*, 141, 813–814. Retrieved from <http://web.ebscohost.com.ezp01.library.qut.edu.au/>
- Ollendick, T., King, N., & Yule, W. (1994). *International handbook of phobic and anxiety disorders in children and adolescents*. New York: Plenum.
- Pearcy, M. T., Clopton, J. R., & Pope, A. W. (1993). Influences on teacher referral of children to mental health services: Gender, severity, and internalizing versus

- externalizing problems. *Journal of Emotional and Behavioral Disorders*, *1*, 165-169.
doi:10.1177/106342669300100304
- Pine, D. S., Cohen, P., Gurley, D., Brook, J., & Ma, Y. (1998). The risk for early-adulthood anxiety and depressive disorders in adolescents with anxiety and depressive disorders. *Archives of General Psychiatry*, *55*, 56–64. doi:10.1001/archpsyc.55.1.56
- Rickwood, D. (2005). Supporting young people at school with high mental health needs. *Australian Journal of Guidance and Counselling*, *15*, 137-155.
doi:10.1375/ajgc.15.2.137
- Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health*, *4*(3) (Supplement), 1-34. doi:10.1375/ajgc.15.2.137
- Rothi, D. M., Leavey, G., & Best, R. (2008). On the front-line: Teachers as active observers of pupils' mental health. *Teaching and Teacher Education*, *24*, 1217–1231.
doi:10.1016/j.tate.2007.09.011
- Rothi, D., Leavey, G., Chamba, R., & Best, R. (2005). *Identification and management of pupils with mental health difficulties: A study of UK teachers' experiences and views*. London/Birmingham, England: Barnet, Enfield & Haringey Mental Health Trust/NASUWT. Retrieved from <http://www.playfieldinstitute.co.uk>
- Rubin, K. H. (1985). Socially withdrawn children: An "at-risk" population? In B. H. Schneider, K. H. Rubin, & J. E. Ledingham (Eds.), *Children's peer relations: Issues in assessment and intervention* (pp. 125-139). New York: Springer-Verlag.
- Saavedra, L. M., Silverman, W. K., Morgan-Lopez, A. A., & Kurtines, W. M. (2010). Cognitive behavioral treatment for childhood anxiety disorders: Long-term effects on anxiety and secondary disorders in young adulthood. *Journal of Child Psychology and Psychiatry*, *51*, 924-934. doi: 10.1111/j.1469-7610.2010.02242.x

- Sanders, M. R., Tully, L. A., Baade, P. D., Lynch, M. E., Heywood, A. H., Pollard, G. E., & Youlden, D. E. (1999). A survey of parenting practices in Queensland: Implications for mental health promotion. *Health Promotion Journal of Australia*, *9*, 105-114.
Retrieved from <http://search.informit.com.au.ezp01.library.qut.edu.au>
- Sayal, K. (2006). Annotation: Pathways to care for children with mental health problems. *Journal of Child Psychology and Psychiatry*, *47*, 649–659. doi:10.1111/j.1469-7610.2005.01543.x
- Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behavior Research and Therapy*, *36*, 545–566. doi:10.1016/S0005-7967(98)00034-5
- Strauss, C. C., Frame, C. L., & Forehand, R. (1987). Psychosocial impairment associated with anxiety in children. *Journal of Clinical Child Psychology*, *16*, 235-239.
doi:10.1207/s15374424jccp1603_8
- Stevenson-Hinde, J., & Shouldice, A. (1993). Wariness to strangers: A behavior systems perspective revisited. In K. H. Rubin & J. B. Asendorpf (Eds), *Social withdrawal, inhibition, and shyness in childhood* (pp.101-116). New York: Lawrence Erlbaum.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Boston, MA: Pearson and Allyn & Bacon.
- Teagle, S. E. (2002). Parental problem recognition and child mental health service use. *Mental Health Services Research*, *4*, 257 – 266. doi:10.1023/A:1020981019342
- Thurston, I. B., & Phares, V. (2008). Mental health service utilization among African American and Caucasian mothers and fathers. *Journal of Consulting and Clinical Psychology*, *76*, 1058-1067. doi:10.1037/a0014007
- Zahner, G. E. P., & Daskalakis, C. (1997). Factors associated with mental health, general health, and school-based service use for child psychopathology. *American Journal of Public Health*, *87*, 1440-1448. doi:10.2105/AJPH.87.9.1440

Zubrick, S. R., Silburn, S. R., Garton, A., Burton, P., Dalby, R., Carlton, J., ... Lawrence, D. (1995). *Western Australian Child Health Survey: Developing health and well-being in the nineties*. Perth, WA: Australian Bureau of Statistics and the Institute for Child Health Research.

Appendix: Five vignettes used in this study based on vignettes from Green et al. (1996) and Percy et al. (1993).

Very severe anxiety disorder:

Benjamin [Beth] is a shy 10-year-old who worries about tests and grades. He [She] bites his [her] nails and approaches the teacher's desk with several questions and complaints of 'tummy pains' just before a test is to begin. He [She] often cries if he [she] receives a poor grade or if he [she] is criticized. He [She] very much wants to please his [her] teacher and parents, and thus fears making mistakes and feels guilty when he [she] does poorly. He [She] often worries so much about his [her] teachers' and parents' expectations that he [she] feels he [she] cannot breathe and will ask to stay home from school.

Severe anxiety disorder:

Mark [Michelle] is a 10-year-old boy [girl]. He [She] works slowly in the classroom and as a result often has to take his [her] work home to complete. He [She] seems to procrastinate often. This is partly due to his [her] excessive fear of making mistakes and oversensitivity to criticism, as he [she] feels a need to do "perfect" work. He [She] generally finishes his [her] work and gets good grades, but it takes him [her] much longer than his [her] peers. In general, he [she] is a child who tends to withdraw and keep things to himself [herself].

Moderate anxiety symptoms:

Joshua [Jess] is a shy 10-year-old boy (girl) who prefers to play alone during recess. Sometimes, he [she] seems nervous when his [her] peers attempt to engage him [her] in group activities. When group activities are conducted in the classroom, he [she] participates, however he [she] is noticeably uncomfortable. When he [she] plays alone, he [she] is creative and active.

Mild anxiety symptoms:

Sam [Sarah] is a 10-year-old boy [girl]. He [She] tends to seek excessive attention from his [her] teacher. When he [she] does not receive attention, he [she] appears sad and withdraws. He [She] is also overly anxious to please, so he [she] is well behaved in the classroom and gets good grades. He [she] is proud of his [her] academic achievement and reports his [her] favorite subjects are Mathematics and Science.

Minimal anxiety symptoms:

Tom [Tegan] is a 10-year-old boy [girl]. He [She] tends to be very talkative in class and has several good friends. He [She] requires assistance in reading, however does well in Mathematics and Physical Education. He [she] enjoys taking tests although feels slightly nervous prior to the test. In addition, he [she] enjoys giving presentations in front of the class and is a member of the debating team and the class representative.